

**On Two New species of Coniopterygidae
(NEUROPTERA) from Egypt**

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Mr. C. B. Williams has recently published (Ministry of Agriculture, Egypt; Technical and Scientific Service; Bull. N° 28, 1923) an account of a new light trap which he has used in Egypt with considerable success. Among other insects taken in the desert country of the Wadi Digla, near Cairo, at the end of March 1923, were fourteen Coniopterygidae, and these specimens Mr. Williams has kindly handed to me for examination and description.

All the insects are males. This is interesting in confirming a suspicion which I had long had, namely that only male Coniopterygidae are attracted to light. Before Mr. Williams capture I had myself known males only of the following British species to come to light : *Conwentzia psociformis* Curt., *Semidalis aleurodiformis* Steph., and *Coniopteryx tinciformis* Curt. (= *Malacomyza lactea* Wesm.). This fact has not previously been recorded as it seemed to me that there was insufficient data for a definite assertion that males alone were attracted by light. Now that fourteen specimens, all males, have been taken in Egypt, with no females, it appears highly probable that females are not positively phototactic and that only males are attracted to light.

The specimens taken comprise two new species,

thirteen of one and a single specimen of the other, as follows.

Parasemidalis pallida sp. n. (Figs. 1-5)

Head and appendages, sclerites of thorax, legs, and apex of abdomen, dark brown. Abdomen and in-

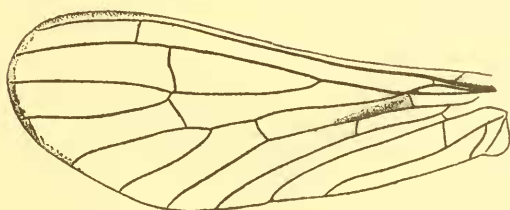


Fig. 1. — *Parasemidalis pallida* sp. n., TYPE — Left forewing $\times 20$.

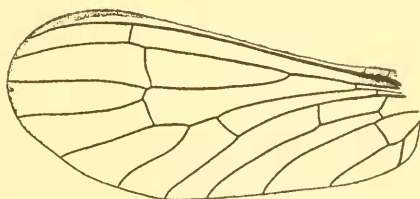


Fig. 2. — *Parasemidalis pallida* sp. n., TYPE — Left hindwing $\times 20$.

terstices of thorax, greyish yellow. Wings sparsely covered with white waxy powder, with venation wholly pale; pterostigmatic region more opaque, white.

Head rounded, with large, black, hemispherical, compound eyes placed laterally. Antennae moniliform,

36-jointed; the basal joint large, as broad as long; the second joint about twice as long, and somewhat thicker than the majority of distal joints. The next 33 joints are almost equal, rounded, and each about one-and-a-half times as long as broad. The terminal joint is twice the length of the penultimate joint, and tapers somewhat apically. Labrum with five short

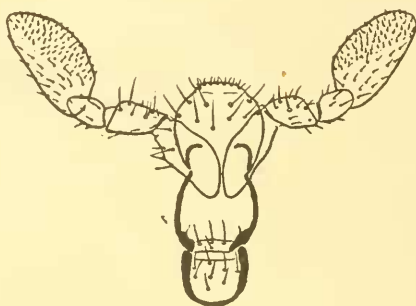


Fig. 3. — *Parasemidalis pallida* sp. n., TYPE — Labium
× 100.

stout setae on its anterior margin. Mandibles curved, and sharply pointed apically, with one large blunt tooth internally. Maxillae (Fig. 4) with galea and lacinia distinct, the latter with a number of curved setae apically. Palpus five-jointed, the terminal joint elongate, as shown. Labium as shown (Fig. 3), cula-bium rounded in front. Palpi four-jointed, the terminal joint large and hatchet-shaped.

Prothorax about one-and-a-half times as long as broad, narrower anteriorly, with the usual elongate lateral chitinous supports, and also with a brown

sclerite dorsally. Meso- and methorax stout and of usual Coniopterygid form, strongly supported by sclerites.

Legs fairly slender. Forelegs with coxa stout, twice as long as broad; trochanter smaller, but also twice as long as broad. Femur and tibia about equal in length. The femur is almost smooth, but with a row of 7-9 stout setae in its basal third. Tibia clothed



Fig. 4. — *Parasemidalis pallida* sp. n., TYPE — Right maxilla $\times 100$.

with stiff setae, especially distally. Tarsus almost as long as tibia. Ratio of tarsal joints 31 : 10 : 7 : 6 : 10. Second and third pairs of legs longer and smoother than fore pair, the hindlegs being the longest. In the second pair the femur and tibia are almost equal, in the hindlegs the tibia is about one-and-a-quarter times the length of the femur. Tarsal ratio of second pair of legs is 33 : 12 : 6 : 5 : 10. That of the hind pair is 34 : 11 : 8 : 6 : 11. In all legs the tarsus ends with a pair of curved claws, each with an obscure tooth about its middle.

Wings (Figs. 1 and 2) sub-equal, with venation pale, and membrane almost colourless, though slightly tinged with fuscous. Pterostigmatic region of costal field opaque, white. No conspicuous marginal setae.

The venation (Figs. 1 and 2), is typical of *Parasemidalis*, i.e. the cross-vein from M to Cu, strikes the former on the stem and not on M_3+4 in both pairs of wings. The cross-vein from R_1 to Rs strikes the latter on the stem Rs, except in the right hindwing, where it strikes Rs just out on R_2+3 . This character is variable, see below. Where I A meets the margin of the forewing there is a slight indentation. This is more or less distinct in other specimens.

The abdomen is stout, with wax-secreting areas arranged typically. The apex is more strongly chitinised and dark brown (Fig. 5). The lateral valves or paraprocts are narrow, as shown, and their dorsal attachment is peculiar. Lateral hooks are present. The sub-genital plate is small. The penis sclerites (shewn shaded with cross lines) are fused distally round the penis.

Length of body	approx. 3.4 mm.
» » ant. wing	» 3.16 mm.
» » post. wing	» 2.91 mm.

HABITAT.—Wadi Digla, near Cairo, Egypt; March 1923. Taken at light by Mr. C. B. Williams.

HOLOTYPE ♂ in British Museum (Nat. Hist.).

Thirteen specimens, all males, were taken by Mr. C. B. Williams. These shew variations from the type mainly in the wing-venation, but there is also variation in colour of the body, and a slight variation in the number of antennal joints, tarsal ratio, arrangement of setae &c. The colour is probably of little significance, and abdominal coloration from pale yellow to almost black occurs.

The variation in wing-venation mainly concerns the cross-vein from R_1 to R_s . This may strike R_s either before, at, or after the fork point. In the thirteen specimens examined the following proportion of these variations was observed.

In forewings, cross-vein before fork point of R_s	13 wings
» » » at » » » »	8 »
» » » after » » » »	5 »
In hindwings, cross-vein before fork point of R_s	9 wings
» » » at » » » »	11 »
» » » after » » » »	6 »

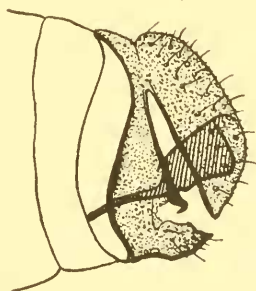


Fig. 5. — *Parasemidalis pallida* sp. n., PARATYPE — Male genitalia $\times 100$ (Penis sclerites shown shaded with oblique lines).

In the hindwing of one specimen R_{4+5} forks near the margin and R_4 meets R_{2+3} apically, while R_5 runs into the margin. Both R_4 and R_5 in this case contain a trachea. In the forewing of another example R_{2+3} is forked apically, and yet another two have R_{4+5} forked apically. In both fore- and hindwings

of the right side of one specimen a small spur issues from the cross-vein from R_1 to $R_2 +_3$ and passes a short distance outwards. Such variations as these are of common occurrence in Coniopterygidae and are of little importance, though they may be of some significance teratologically.

The number of antennal joints varies from 35 to 38.

The number of special setae on the anterior femora averages 6.

This species differs from previously described species of *Parasemidalis* in its larger size, and also in certain details which are given in the description. Its pale colour is not altogether exceptional, but it is unusual in *Parasemidalis*. The present record is the first of the occurrence of the genus in Africa.

Coniopteryx (=Malacomyza Wesm.) aegyptiaca sp.n.

(Figs. 6 - 8)

Entire body dark brown in dry specimen, wings pale, but membrane tinged with fuscous. The whole insect is covered with white, waxy powder.

Head rounded; compound eyes hemispherical, black. Antennae moniliform, 29-jointed; the basal joint largest, cylindrical, twice as long as broad; the second joint also cylindrical and twice as long as broad, but of smaller dimensions; the next four or five joints have their length almost equal to their breadth, but more distally the antennal joints become longer, and most of them are about one-and-three-quarters as

long as broad. The terminal joint is about one-and-a-half times the length of the penultimate joint. It tapers to a blunt point. The antennae are but sparsely provided with the peculiar sense hairs common to male Coniopterygidae, and thus differ markedly from other species of *Coniopteryx*. The mandibles are curved and pointed apically, with one, blunt, internal tooth. Maxillae with a stout, squarish stipes and

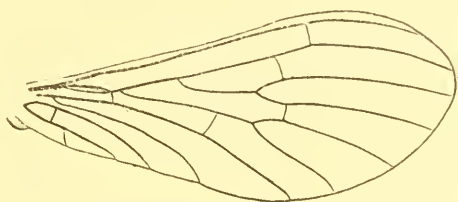


Fig. 6. — *Coniopteryx aegyptiaca* sp. n., TYPE — Right forewing $\times 20$.

a slender lacinia with a few hairs apically. Galea not peculiar. Palpus with joints of fairly uniform breadth. The palpal ratio is about $6 : 7 : 8 : 6\frac{1}{2} : 17$, the terminal joint being longest and obscurely serrate on its inner side. Labium, with eulabium rather square and with a straight anterior margin bearing a row of seven marginal sense hairs, behind this is a straight row of four larger hairs. Labial palpi of usual form, four-jointed, the terminal joint narrowly hatchet-shaped.

Prothorax short and rather square, with lateral supporting rods. Meso- and metathorax short and stout, of usual structure.

Legs fairly slender. Forelegs with femur and tibia of equal length, the femur with eight larger claspings hairs in basal half. Tibia very hairy distally. Tarsal ratio 26 : 8 : 6 : 4 : 6. Mesothoracic legs longer than prothoracic, with tibia slightly longer than femur and tarsal ratio 33 : 10 : 6 : 4 : 6. Metathoracic legs still longer than mesothoracic, with tibia about one-

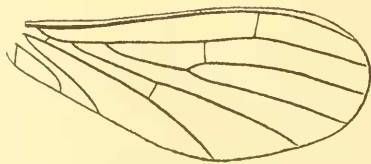


Fig. 7. — *Coniopteryx aegyptiaca* sp. n., TYPE — Right hindwing $\times 20$.

and-a-half times the length of femur, and tarsal ratio 33 : 12 : 7 : 4 : 8. Both the hindpairs of legs are slightly less hairy than the fore pair.

Wings (Figs. 6 and 7) subequal, the hindwings smaller. In the forewings (Fig. 6) the cross-veins from Sc to R_1 and from R_1 to $R_2 +_3$ are apart. The hindwing venation (Fig. 7) is typical of the genus *Coniopteryx*, i.e. the media is simple and unbranched. The cross-veins from Sc to R_1 and from R_1 to $R_2 +_3$ are widely apart. The margins of the wings bear no conspicuous longer hairs.

Abdomen stout, narrowing slightly posteriorly. Genitalia strongly chitinised and pigmented dark brown (Fig. 8). Paraprocts sharply tapering. Sub-

genital plate, in my preparation, furrowed ventrally. Penis sclerites each with a long, tapering, and slightly recurved outer tooth, and a smaller tooth, which is sharply angled anteriorly at its apex, more internally. Both these projections arise from the dorsal sides of the penis sclerites. A median, downwardly directed,



Fig. 8. — *Contiopteryx aegyptiaca* sp. n., TYPE — Male genitalia $\times 100$.

sharp, curved process, between the penis sclerites, appears to be unpaired. (I have not been able to determine the nature of this, as it seemed inadvisable to dissect the unique type to make such determination possible).

Length of body	2.43 mm.
» » ant. wing	2.71 mm.
» » post. wing	2.28 mm.

HABITAT. Wadi Digla, near Cairo, Egypt ;
March 1923. Taken at light by Mr. C. B. Williams.

HOLOTYPE σ in British Museum (Nat. Hist.).

Only one specimen of this interesting Coniopygoid was taken, and it also is the first species of its genus from the continent of Africa.

In the foregoing descriptions and accompanying figures most attention has been given to structural details and less to colour &c. Colour, especially, is extremely variable and often alters in different ways after death. Some writers have stressed the importance of the waxy powder covering the insect. This is quite useless as a character. A newly emerged specimen has no powder upon it and the powder always rubs off easily. It is secreted by glandular areas, mainly upon the abdomen, in a similar way to that in which the waxy powder of Aleurodids arises. In a previous paper (Withycombe, *Trans. Ent. Soc. London*, 1922, p. 578) it was stated that these glands were unicellular. This is not quite correct, as a rule. The glands each consist usually of a group of three or four cells with ill-defined cell-walls. There is a darkly staining «cap cell» to the group, and this contains a distinct nucleus. The other nuclei are often indistinct. The wax secreted passes to the exterior through a short tube which is slightly movable within an outer collar. The short, movable tube is to be regarded as a modified hollow primary seta, or macrotrichion. The gland cells are modified hypodermal cells. All these structures are being described in a later paper, but an early rectification of previous slight inexactitude would appear desirable.

The waxy powder always covers the body fairly evenly, except where suitable retaining hairs are absent. The only case described of the wings not being

uniformly coated with powder is that by MacLachlan (Journ. Linn. Soc. London, Vol. XVI, 1882, pp. 173-174) of *Semidalis pulchella*, where he says that certain spots on the wing had the powder less dense. I have been able to examine MacLachlan's type and find that this is not correct. The wing is fairly evenly coated with white powder, as usual, but the wing membrane

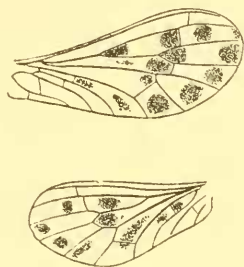


Fig. 9. — *Semidalis pulchella* McL., TYPE — Wings drawn to smaller scale than other wings. Rough drawing, for markings only.

being pigmented black only in certain spots gives the appearance of greyer and less densely covered patches. As MacLachlan gives no figure, and his collection is not easy of access, a reproduction of a rough free-hand sketch made of the wings is given in Figure 9. This figure cannot be depended upon for some venational details, and it was not made with a camera lucida. Its only value is in shewing the distribution of blackish spots. The venation appears to be typical of *Semidalis* Enderl.
